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Bloodstain Analysis Report

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Case Overview:

I reviewed lab reports, police reports, court documents, consultant reports, photographs, and witness testimony related to this case. I reviewed the General Judgment (Post-Conviction), In the Circuit Court of the State of Oregon for the County of Malheur, 26 November 2019, by Sr. Judge Patricia Sullivan, Circuit Judge.

I learned from police reports and other information that Leah Freeman went missing on June 28, 2000. She had been located, deceased, on August 3, 2000, in a wooded area about 8 miles from her last known location. Her body was in an advanced decomposition stage. Dr.

Olson, pathologist, was not able to determine an exact cause of death due to advanced state of decomposition but opined that death was due to homicidal violence. I learned that a right shoe later identified as belonging to Leah Freeman was found by a worker on June 28, 2000, near a cemetery in her hometown. A left shoe, later identified as Leah Freeman's, was found by Deputy Sheriff Oswald on July 5, 2000. It was several miles from the location of the body. This left shoe, according to a report by Kathy Wilcox, forensic scientist, was found to have several bloodstains on the sole. An analysis of the shoe by Forensic Science Services, England, identified blood on the sole, inside heel and on lace end of the left shoe, and noted a strong smell of decomposition associated with the left shoe. DNA analysis identified the cuttings from the shoe as containing information consistent with Leah Freeman's DNA profile. Kathy Wilcox offered the opinion that a bloodstain on the sole of the left shoe could be identified as a high or medium velocity bloodstain.

It is my opinion, based on my training, education, experience, and research, that there is insufficient information to identify a mechanism that produced the bloodstains on the sole of the left shoe, and that the images on the upper interior of the left shoe of Leah Freeman are consistent with transfer bloodstains.

I used a computer enhancement technique called "Invert." This is a presumptive and discovery non-destructive method for identifying potential bloodstains. I used that method on a digital image of the left shoe of Leah Freeman to include the sole of the shoe, and the top exterior and top interior of the shoe. I also used information from education, research, training, and experience to identify and evaluate bloodstain patterns and associate mechanisms for formation of bloodstain patterns.

Materials and Methods:

A. Materials:

- a. I received photographs of the shoes of the victim and a lab report hand drawn sketch of the left shoe. The photos and sketch were from a report by Kathy Wilcox. The photographs are as follows:

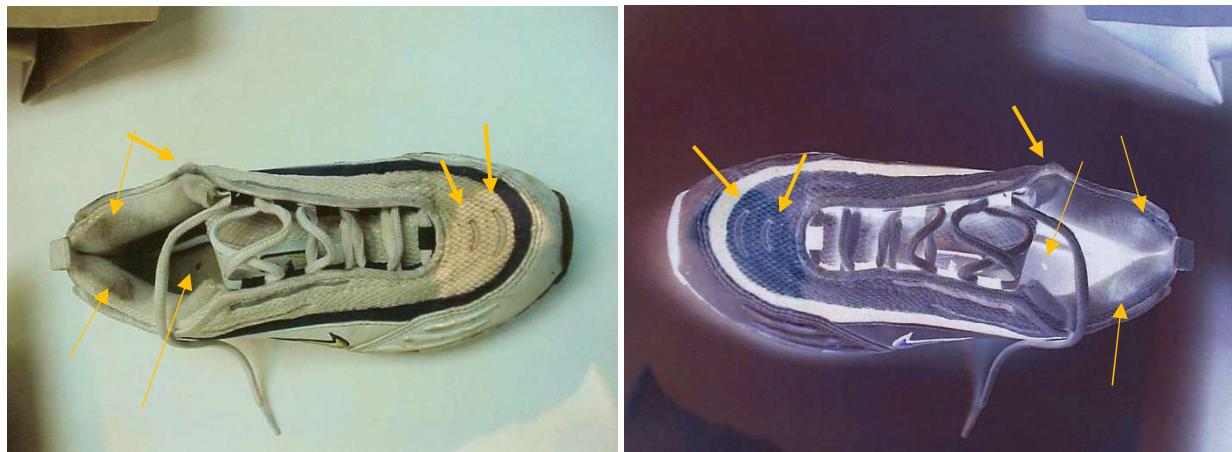


Figure 1: Left shoe. The left image is a standard image taken from an official report. The right image is an inverted image using Irfanview software, <https://www.irfanview.com/>. Both images present dark areas (standard image) and lightened areas (inverted image) that are consistent with blood visualization using the invert technique. Mark up by Larry Barksdale.

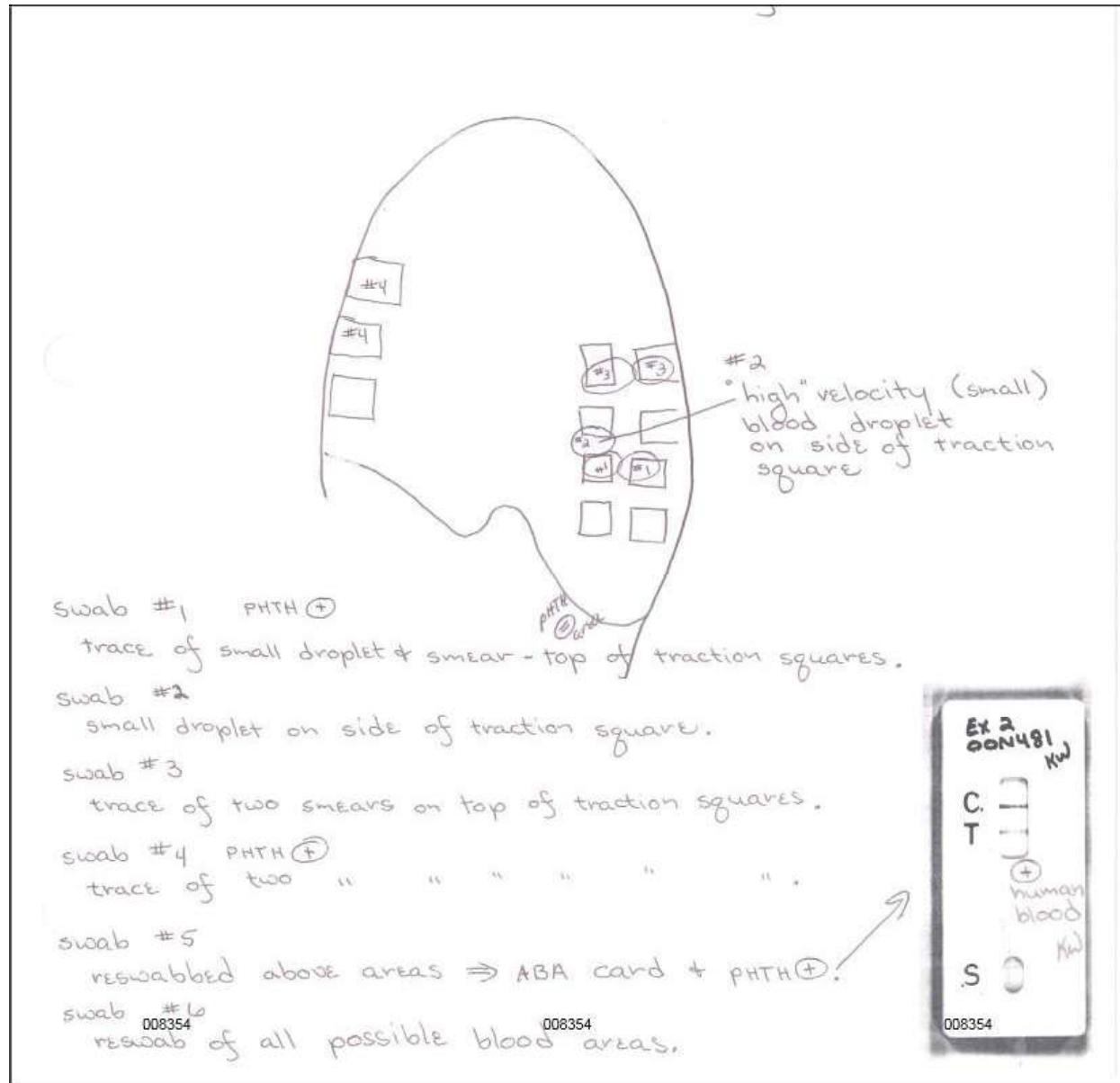


Figure 2: Left shoe sketch. This is a sketch of the left shoe by Kathy Wilcox indicating #2 was a high velocity bloodstain. The notes indicate there were 4 possible bloodstains. #1, #3, and #4 were identified as small droplets and smear. The notes indicate that #1, #4, #5 were presumptively tested for blood. Number 2 (#2) was identified as a "high" velocity blood droplet. The notes do not show that #2 was ever presumptively tested.

Following are images of the left shoe. The standard images are from the lab report of Kathy Wilcox. The right images are inverted images, by me, using Irfanview photo editing software, <https://www.irfanview.com/>.



Figure 3: Overall sole of left shoe of Leah Freeman.



Figure 4: Close-up left shoe of Leah Freeman. Yellow arrows in images point to the bloodstain identified by Kathy Wilcox as high velocity bloodstain. Mark up by Larry Barksdale.



Figure 5: Close-up image and mark up of left shoe of Leah Freeman. The square was placed in the image in the original report. It encloses the bloodstain of interest to Kathy Wilcox. Yellow arrows point to the bloodstain identified by Kathy Wilcox.

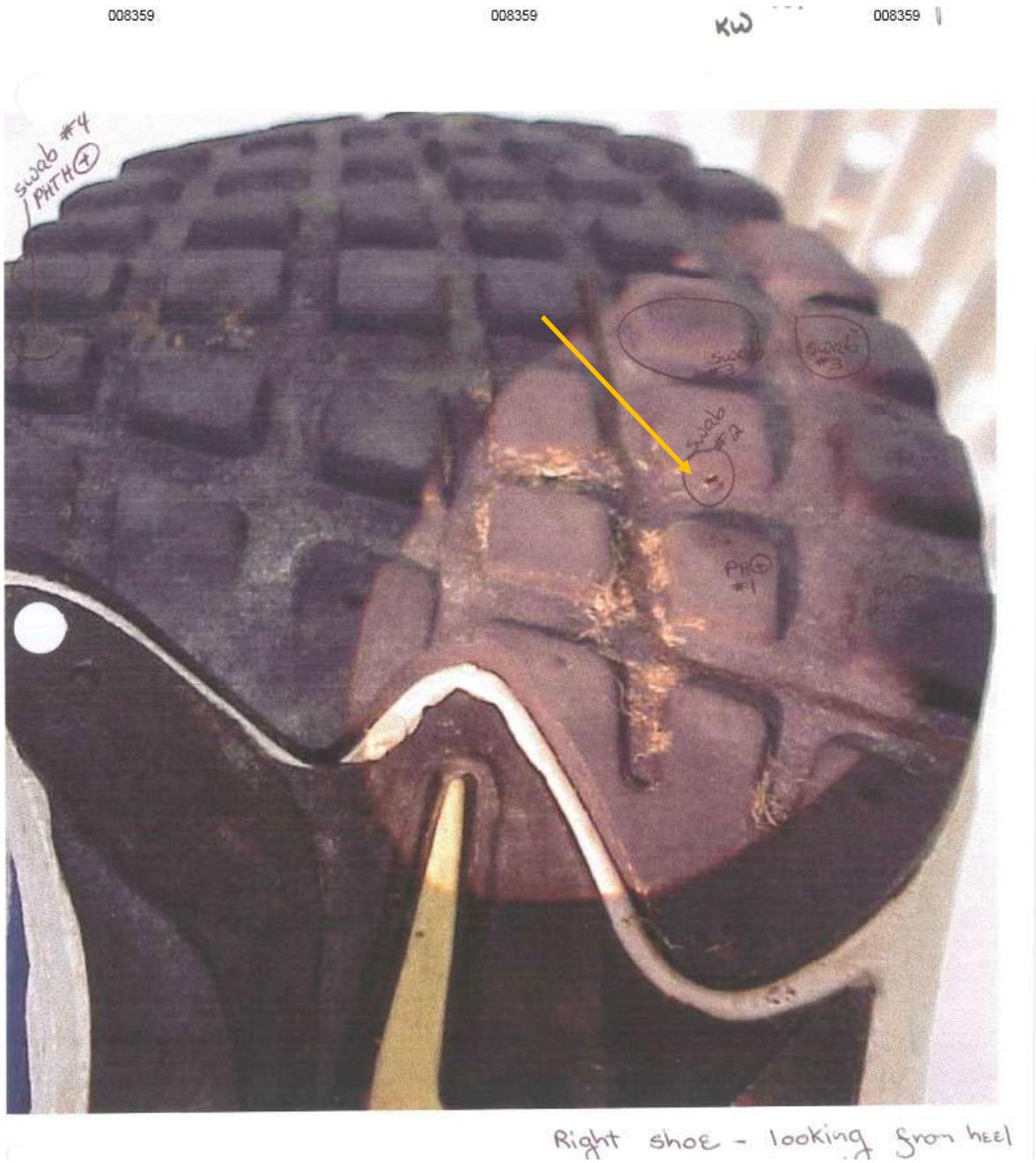


Figure 6: Left shoe of Leah Freeman. Although the notes say right shoe, this is a heel to toe image of the left shoe. The light illuminates the bloodstain of interest to the case. The yellow arrow points to the bloodstain identified by Kathy Wilcox as high velocity. The bloodstain is not a small round geometric pattern. It is an irregular undefined geometrical pattern. There are no indications of elliptical bloodstains, indication of directionality, misting like stains, indications of mass or tissue. There is a paucity of bloodstains.

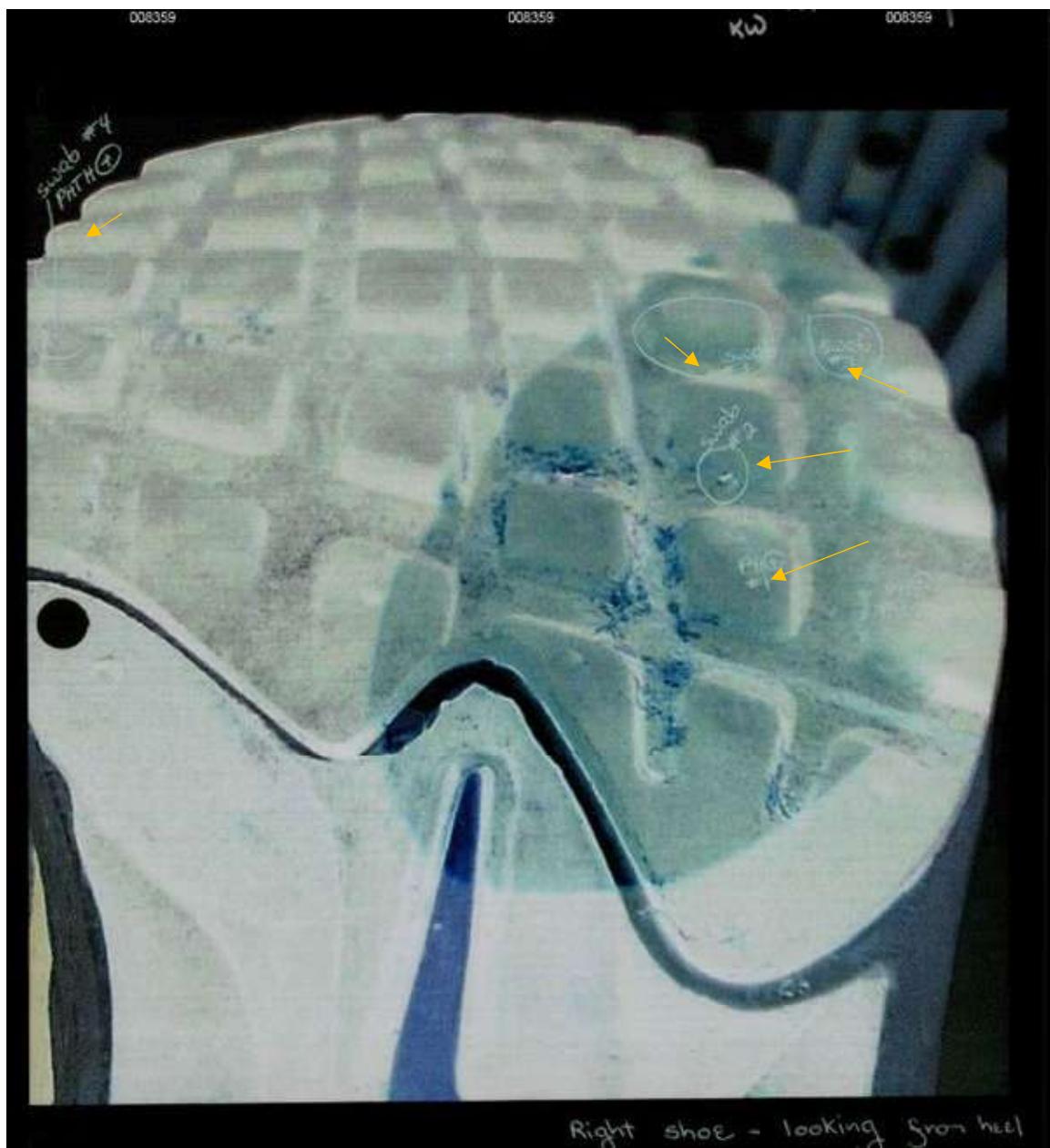


Figure 7: Left shoe of Leah Freeman. The yellow arrows point to suspected bloodstains. Mark up by Larry Barksdale.

Projected bloodstains such as those caused by gunshot or similar high force mechanism, blood excreted from the mouth or nose, blood projected from the body due to a wound, or blood cast from an object moving in air are defined by small, circular bloodstains with accompanying elliptical bloodstains. Those produced by gunshots may have a misting section of stains and evidence of tissue, hair, and other trace evidence. Those produced by expiration from the mouth, as an example, have stains with air bubbles. Excreted stains rarely have misting stains and rarely tissue or hair trace evidence. Blood cast offs from an object have

elliptical stains and some sequential and linear stain relationship among several stains. These various projected bloodstains have a sense of directionality.

Insects, particularly flies, defecate and regurgitate after feeding on human bodies and leave stains that are small and circular, very irregular, and stains that are elliptical but deformed. Insect stains lack directionality in the overall pattern, and the tails do not point in an organized consistent direction that would help to define an origin. They randomly point in many different directions. Other than blood there is no other trace evidence, such as mass tissue and hair, associated with insect stains. Rough surfaces can disturb the geometric morphology of blood stains. Typically, the edges are rough. Cloth can cause diffusion of a bloodstain. However, the stains retain the general characteristics of a circle or ellipse if a projected type of stain.

The bottom of the shoe lacks many features associated with high velocity and medium velocity bloodstain patterns: clear morphology showing circular to elliptical geometric structure, large number of stains, directionality, mass, tissue, misting. High velocity bloodstain patterns are produced because of a gunshot, or mechanism with extreme force. Expirated bloodstains are considered medium velocity bloodstains and are like those spewed from the body through the mouth or nose.

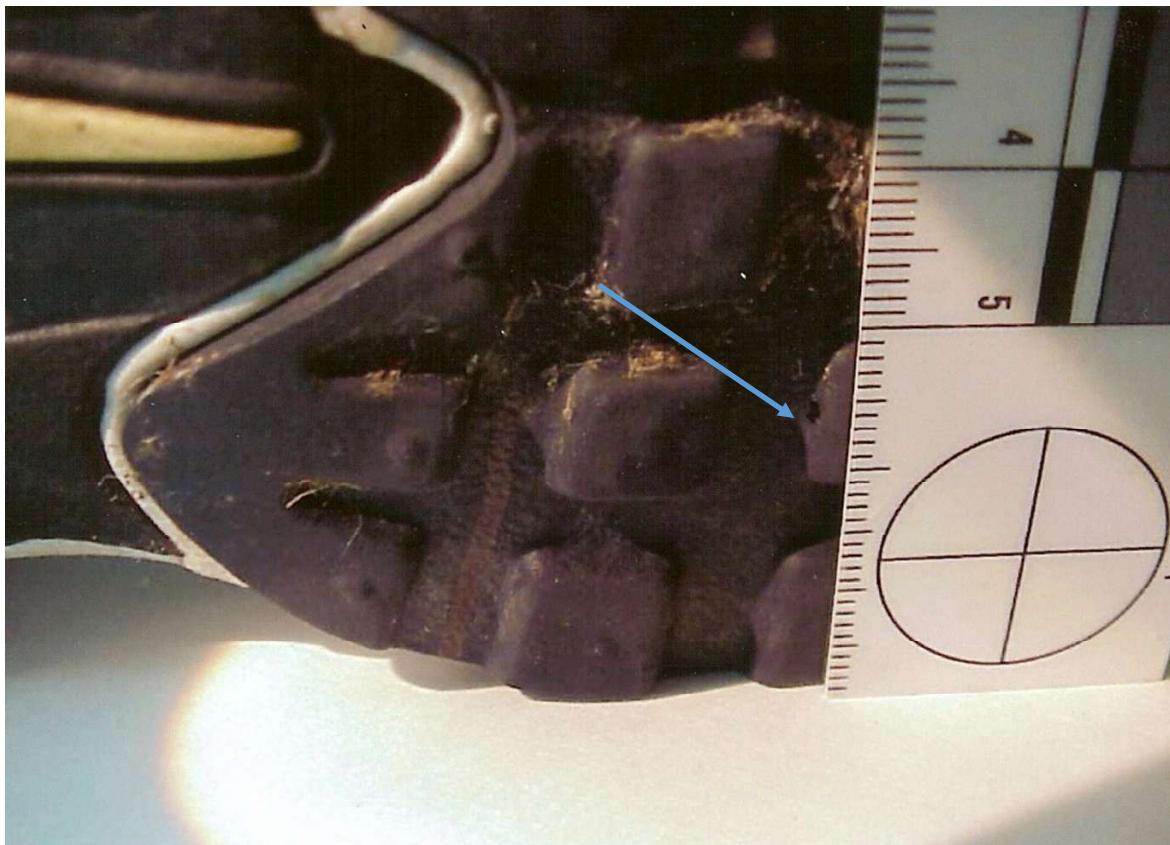


Figure 8: Image of left shoe of Leah Freeman. It shows the questioned stain as an irregular shape without significant accompanying stains.

b. Case reports:

I received the law enforcement and forensic lab reports from agencies in Oregon, the independent lab report from Forensic Science Services of England, and the General Judgement (Post-Conviction) by Sr. Judge Patricia Sullivan, Circuit Judge, Oregon.

c. Bloodstain Information and Literature Review

I gathered information on bloodstains that I have collected over the years in my roles as police officer, crime scene investigator, forensic scientist, consultant, and professor. Materials consist of photographs, textbooks, journal articles, case files, investigative and teaching materials, and research projects.

d. Photo Editing Software.

I used Irfanview to view digital images and to enhance digital images. This is free software. I have used it for many years. I have testified in court many times on digital images and used this software for enhancing and viewing digital images. It can be found at <https://www.irfanview.com/>.

B. Methods

a. Conduct Field Exercise and Experiment.



The invert technique presents blood as a bluish-white color. This is a presumptive technique. Basically, when a digital image is inverted dark objects appear lighter in the inverted image. Since all materials absorb, transmit and reflect light different, the characteristics of a given material can be presumptively identified by inverting and showing a different contrast from other materials. In the above image the yellow circles identify corresponding known bloodstains. The black lines point to known corresponding red magic marker stains. There are false positives with this technique. However, it has value for discovery and presumptive decision making.

Figure 9: Field exercise using Irfanview. Images and mark up by Larry Barksdale.

I conducted a comparative exercise using a red magic marker and known human blood to illustrate the applicability of the invert process using Irfanview photo editing software. Figure 9 is an image of the results of that exercise. The shoe was a personal shoe that I knew to be clean of bloodstains. I used a red magic marker to mark spots on the shoe, and I used my blood to make small bloodstains on the shoe. I have used this technique in actual cases and have testified in court before a jury on the use of the technique. In 2005, I published a paper on the technique [1].

The yellow circles indicate known bloodstains. The dark lines indicate red magic marker stains. The known bloodstains are dark in the standard digital image and a bluish white in the inverted image. The red magic marker is also dark in the standard image and whitish in the inverted image. This demonstrates that the invert technique is a discovery and preliminary technique.

It has value in preliminary decision making if there are possible bloodstains on an item. Confirmation is done in a full-service lab with appropriate lab techniques such as DNA analysis.

b. Review case file and related case documents.

I reviewed case file reports and related case documents. This included carefully examining digital images of the left shoe of Leah Freeman. It included using the invert function in Irfanview to create and save images of the left shoe.

I compared the digital images of the left shoe with the sketch drawn by Kathy Wilcox. I was not able to measure the bloodstain of interest since Kathy Wilcox's photographs were not taken in an orthogonally correct perspective. The round circle in the scale in a digital image should be round if the photograph was taken so the axis of the camera lens is ninety degrees to the surface of the object (orthogonal). A comparison with the size of shoe lugs indicated that the bloodstain was not large. It had a morphology that was irregular.

c. Literature Review:

I organized information to define bloodstain patterns and the processes to identify bloodstains patterns. The technique is based strongly on training, education, experience, and research. It starts with a comparative analysis technique in comparing known to unknown patterns, conducting chemical tests to identify blood, biological tests to identify blood, biological and chemical techniques to locate and document blood, biological techniques using DNA methods to identify blood, physical tests to document blood, knowledge of laws of physics to evaluate mechanisms producing bloodstains, behaviors of blood as a material and a liquid, mathematical skills to calculate bloodstain origins, statistical skills to determine credibility of bloodstain evaluations, and logical skill to associate bloodstains with human and physical behavior. I also included reviewing literature on bias, uncertainty, and error to refresh my memory and remind myself to conduct myself in an objective scientific manner.

Bloodstain pattern analysis is based largely on comparison of known patterns generated by known mechanisms. Researchers and practitioners, as an example, fired firearms into materials with blood and documented the resulting bloodstain patterns. Researchers and practitioners documented actual bloodstain patterns at real scenes when the mechanism was known. Case information and anecdotal information combined with research promulgated a body of literature formed around bloodstain pattern analysis. A professional organization was established in 1983 and was known as the International Association of Bloodstain Pattern Analysts [2,3]. Herbert MacDonell, in 1993, published *Bloodstain Patterns* [4].

Over the years there has been extensive ongoing research, revision of terminology, training sessions, college courses and online courses related to bloodstain pattern analysis and bloodstains as evidence [5,6,]. Numerous textbooks have been published that are accepted by the scientific community [7,8,9]. Other resources have published overview and specific information on bloodstain pattern analysis [10,11]. I have drawn on the published information along with training, education, and research to assemble the following overview of bloodstain patterns as they apply to this case. The following images are examples of the more well-known bloodstain patterns that pertain to the case of this report.



Figure 10: Impact bloodstains. Image from personal files of Larry Barksdale

Impact stains are formed when an object impacts existing blood, or a large volume of blood impacts a substrate. This is most noticeable when there is a volume of blood. Common impact stains are created when a body falls into a pool of blood, or the pool is stomped by a foot. When creating classroom exemplars, it is common to slam a basketball into a pool of blood or drop a large can of synthetic blood onto a floor. Characteristics are the central volume of blood and radiating, long, spiny bloodstains accompanied with round stains, and elliptical bloodstains reaching out from the volume stain. Unlike insect stains, the radiating and elliptical stains show organization and directionality of blood movement. These are considered medium

force bloodstains. The term high velocity was used in recent years past but has been replaced in the literature with the term force or a more descriptive term than velocity.



Figure 11: Blood on clothing showing transfer stains, dripping stains from a moving object, and mixture of stains. These are low force stains. This image was from what was believed to be self-inflicted kitchen knife injuries when the victim allowed the arm to hang down and swing free, and blood was cast off and dripped from the knife and injuries to the body. The arm and hand holding the knife was gently swinging back and forth. The victim was sitting in a chair at a table, leaned over, allowing the arm to hang below the chair seat. The surface was the leg of pajama pants. The cast-off stains are identified by smaller stains that seem to group together and form in a line or arc. There are also transfer stains when a bloody object or hand, as examples, touched the pant leg. The yellow box outlines transfer stains. The red box outlines cast-off and drip/drop stains with transfer stains. Images from personal files of Larry Barksdale. Mark up by Larry Barksdale.



Figure 12: The image depicts mixed bloodstains patterns from a self-inflicted gunshot. Image from personal files of Larry Barksdale. Mark up by Larry Barksdale.

In Figure 12 there is a large passive flow of blood creating a pool. There are drip/drop stains as an object (head, hand, shotgun, body) slowly moved around dripping blood. There is an area near the kickstand and under the wheel that is typical of expirated blood spewed from injuries that are mixed with small bloodstains from the force of the firearm. In the left of the image is a paint like misting pattern that is typical of gunshot, high velocity, bloodstains. The pattern is a mixture of patterns.

In the preceding image, the yellow circle indicates the misting associated with high force, such as firearms. The green line indicates drip/drop from falling blood without extra force, and the dark blue link indicate small round stains associated with expirated stains and gunshot produced bloodstains. Notice the small round stains on the upper bike tire. Important information is that when bloodstains are produced due to high force and medium force, there are many small round and elliptical bloodstains that show a certain amount of organization, close association, and directionality. Additionally there are a mixture of stains that conform to definable geometrical shapes such as circular, elliptical, spiny, linear. It takes more than one stain to identify a pattern.



Figure 13: The victim had a large incision in the upper arms from a knife fight event. The bleeding victim, it is theorized, was slinging blood from his body as he walked along the wall. Tear drop stains are known as cast off bloodstains. There are linked linear patterns. The dark colored arrow indicates the direction of travel of the bloodstains. Tails point in the direction of travel. One cannot tell if the blood was being cast off from an arm, a swinging hand, bloody hair, or some other object. Image is from personal files of Larry Barksdale. Mark up by Larry Barksdale.

Individual bloodstains can be measured to determine the origin of the bloodstains. In the above example a line bisecting an elliptical stain can be measured with a protractor to determine a direction of travel. Without measuring it is possible to determine that the bloodstain was travelling top to bottom, right to left, and inward towards the wall.

If a scale had been inserted more accurate measurements could have been done using photogrammetry methods. The methods are based on trigonometry. The width of a bloodstain divided by the length represents the sine of the angle of impact. The invert function, arcsine, represents the angle, in degrees, of impact of the bloodstain. Bloodstains travel in oscillating spheres and when impacting a surface morph into elliptical stains. If they fall straight down, they are round. If they impact at a narrow angle, they are very elongated ellipses.



Figure 14: Mixed bloodstains

In Figure 14, There are cast off (dark circle) bloodstains. These stains are elliptical, and the tails point in the direction of travel of the bloodstain at the time of impact. The bloodstains have a certain linearity and directionality to them. The projected bloodstains are identified by initial points of impact and subsequent long vertical blood lines. These stains are often called arterial spurt bloodstains (yellow circle). The mechanism is that an artery, as an example, is injured and squirts blood. The squirt impacts the surface and runs down the surface. There are transfer stains in which a bloody object touched the surface (green circle). If an object swiped across a surface as compared to touching or contacting, the stain is called a swipe bloodstain. In the above, one could say there were transfer contact and swipe stains. There are also voids in these transfer stains as if something wiped through the existing blood (dark box). Wipe through stains are known as wipe bloodstains. The surface is a rough surface and shows texture to some of the bloodstains. Images are from personal files of Larry Barksdale. Mark up is by Larry Barksdale.

Investigators at the scene might test the suspected blood with preliminary tests such as Hemastix or Phenolphthalein. They most likely would take swabs for future DNA analysis. This does not tell them what took place. More information is needed from a victim, witness, or perpetrator. In the above Figures 13 and 14, a victim was located with sharp force injuries and one that severed a major blood vessel in the arm. The victim told a story of a fight, getting cut, and then trying to get away from his assailant. The bloodstains information, at this point, tends to corroborate the victim's statement.



Figure 15: The green circle presents bloodstains that are like excreted blood. Excreted stains are considered medium force bloodstains. There are small round bloodstains, some elliptical bloodstains, and some mass. Bloodstains might contain air bubbles. They do not have very small stains, mist like stains, or large mass associated with high force bloodstain like those produced by a firearm. The dark squares present transfer stains. They are from a bloody object touching the surface of an object. In this case a person with a throat injury was spewing blood onto the shirt of the attacked and with bloody hands was grabbing the shirt. Image from personal files of Larry Barksdale. Mark up by Larry Barksdale.

Bloodstains rarely stand alone. Other information is needed in identifying a bloodstain pattern.

If a firearm was involved, as an example, then small stains, directionality, elliptical stains, mist like stains, and mass are consistent with bloodstains produced by a firearm. If there are small round stains, absence of mist stains, no known use of a firearm, a victim with injuries to the mouth or chest, bloodstains on the front of a shirt and around the mouth, bloodstains with air bubbles, then the bloodstains are consistent with expired blood although similar to firearm produced bloodstains.

In Figure 15 the victim had sharp force injuries, bloodstains around the mouth and nose, bloody hands, and dribble stains on the front of her shirt. She had sharp force injuries. There was a knife at the scene with blood on it. The shirt in the image was the shirt of the assailant. The bloodstains support a theory that the victim was spewing blood from her injuries and was grabbing the assailant's shirt in a struggle with him. Information other than the bloodstain contributed to reaching a decision that the pattern was most likely an excreted bloodstain pattern.

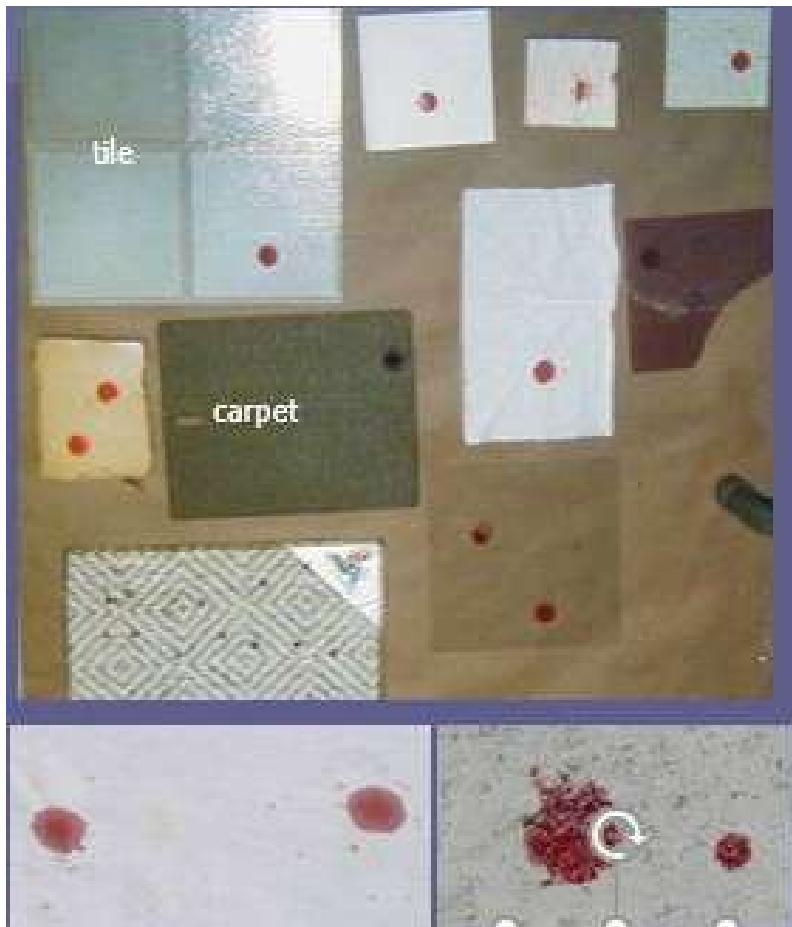


Figure 16: This is a composite of blood, free falling, toward a target surface (substrate). Free falling blood is known as low velocity. Gravity is at work. The stains are mostly round. This indicates a 90-degree angle of impact. Surface morphology can affect the resulting bloodstain pattern. Rough surfaces can cause a break of the blood drop. Fabric can cause the bloodstain

to "grow" due to wicking dynamics. However, the stains retain resemblance to their original morphology. Image is from personal files of Larry Barksdale.



Figure 17: A victim had sharp force injuries from being struck with a lamp. She was trying to crawl from her assailant. He was kicking, stomping, and punching her. There are projected bloodstains, arterial spurt, as blood was being squirted from injuries (door). There are projected, expirated stains, as she spewed blood from her mouth and nose. There are cast off stains from swinging hair and body parts, and from the swinging hands and feet of the assailant. There are transfer stains as she brushes against the door and wall. There are volume stains from her extensive bleeding, and there are swipe stains as she swipes against surfaces. There are wipe stains as she and the assailant move objects through existing bloodstains. Images are from personal files of Larry Barksdale. Mark up is by Larry Barksdale.

The interpretation of the bloodstains in the above images can corroborate the story of the victim, witnesses, and suspects. They may corroborate, or undermine, the story of an assailant.

DNA analysis can identify the origin of the blood. Trace evidence such as hair, fibers, tissue, glass, and bloodstains can add further information to associate people, objects, and things. Impressions such as fingerprints and shoe outsoles can add further information to associate things and objects.

Crime scene reconstructionist use the term consilience to mean a concurrence of the information. All the information points to a reasonable theory based on science and logic.

The following images are a collection of the most common bloodstain patterns. They are presented with standard visualization and with application of the invert technique. Bloodstains analysts may use chemicals such as luminol, or Amido Black for discovery and enhancement of bloodstains.

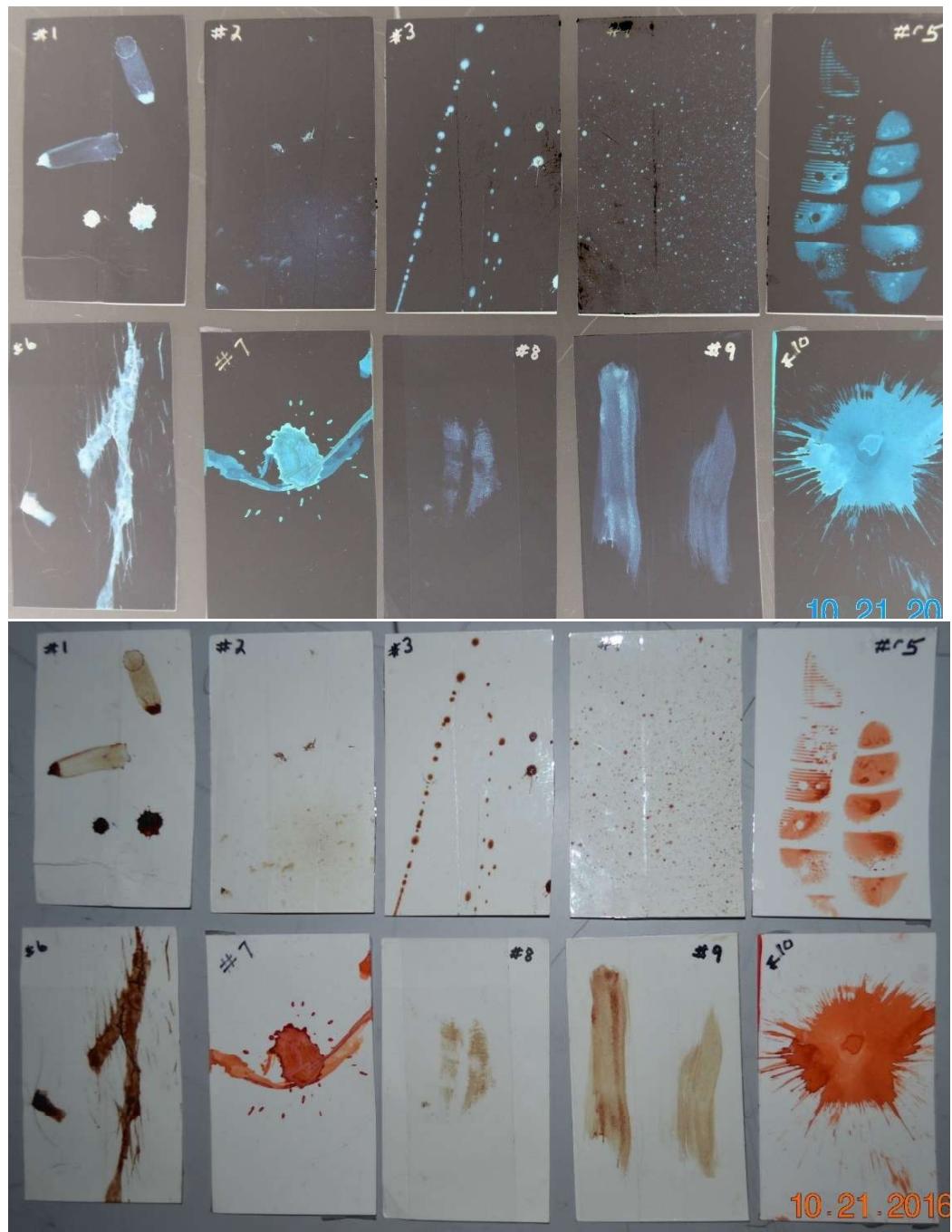


Figure 18: 1. **Wipe**, object moved through existing blood, drip/drop; 2. **Gunshot produced bloodstain**; not misting; 3. **Cast-off**, small, linear, directionality; 4. **Expired**, small, no ; 5. **Impression**; 6. **Swipe**, bloody hair or similar object swipes along a substrate; 7. **Drip/Drop**, blood dripping into blood and then free flowing; 8. **Impression**, lips; 9, **Swipe**, bloody finger swiping across substrate; 10. **Impact**, object impacting pool of blood, or large volume impacting surface, notice spines. Images are from personal files of Larry Barksdale. Mark up is by Larry Barksdale.

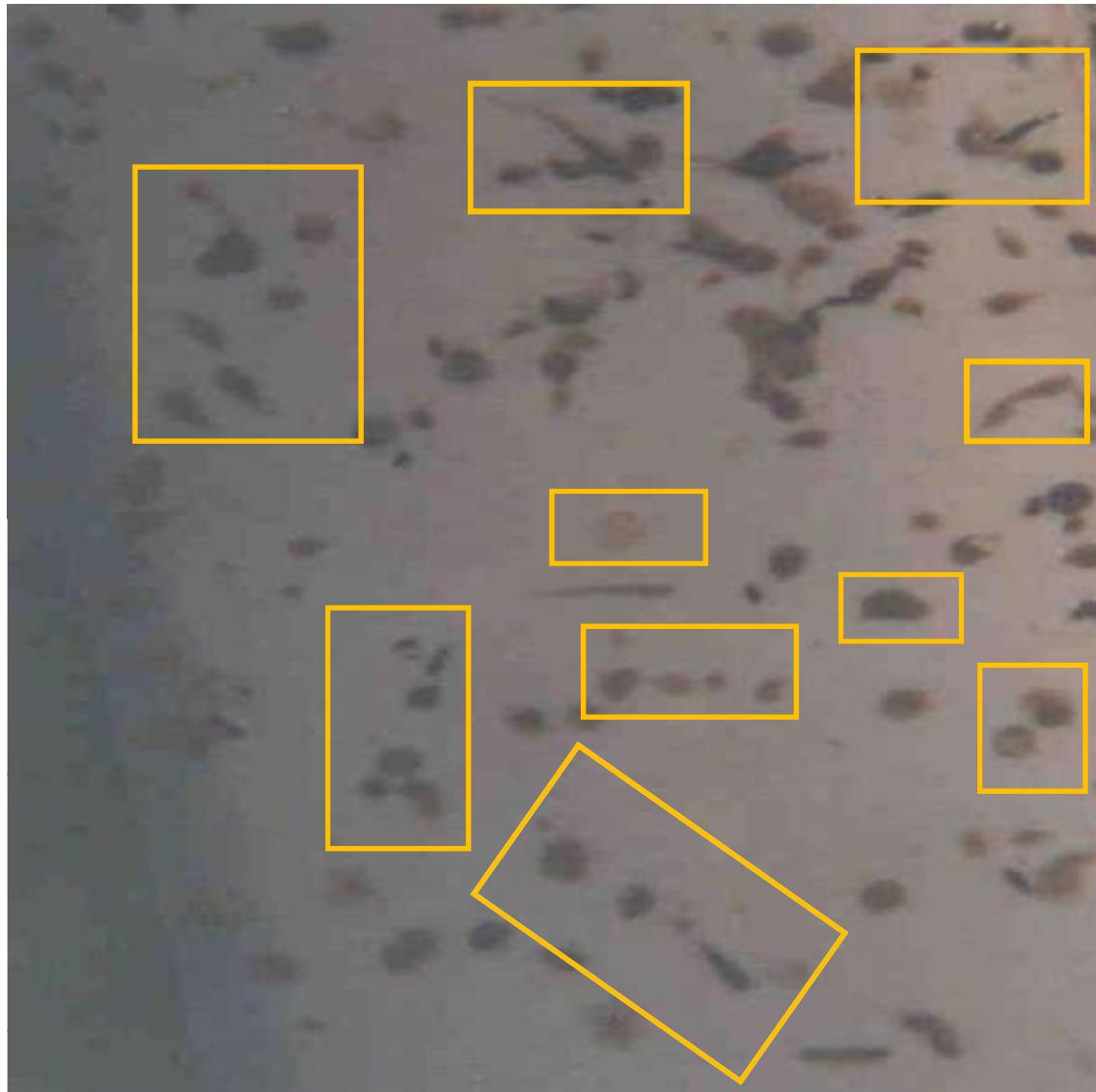


Figure 19: This is an image of insect stains. It is from a scene in which the deceased person had entered an advanced stage of decomposition. The stains are without spatial symmetry and directionality orientation. They have numerous shapes such as round of various sizes and various sharpness of edges. They have mixed colors from light tan to dark color. There are stains with tails that look like sperm cells and others that have curved tails. There are very irregular shaped geometrical stains that are more square than round. Image is from personal files of Larry Barksdale. Mark up is by Larry Barksdale.

Care must be taken in analyzing bloodstains to reduce uncertainty in analyses. Rarely does a single bloodstain stand alone for the development of a credible theory.

Results

In my opinion, the mechanism cannot be conclusively identified that caused the allegedly "high" or "medium" velocity bloodstain on the sole of the left shoe of Leah Freeman. The bloodstains on the upper interior heel area of the left shoe, in my opinion, are transfer bloodstains due to contact of a bloodstained object, such as a finger, with the shoe. There is another stain that appears to be blood on the rear inner bed of the shoe. A mechanism cannot be identified for it.

a. Left Shoe Bloodstains:

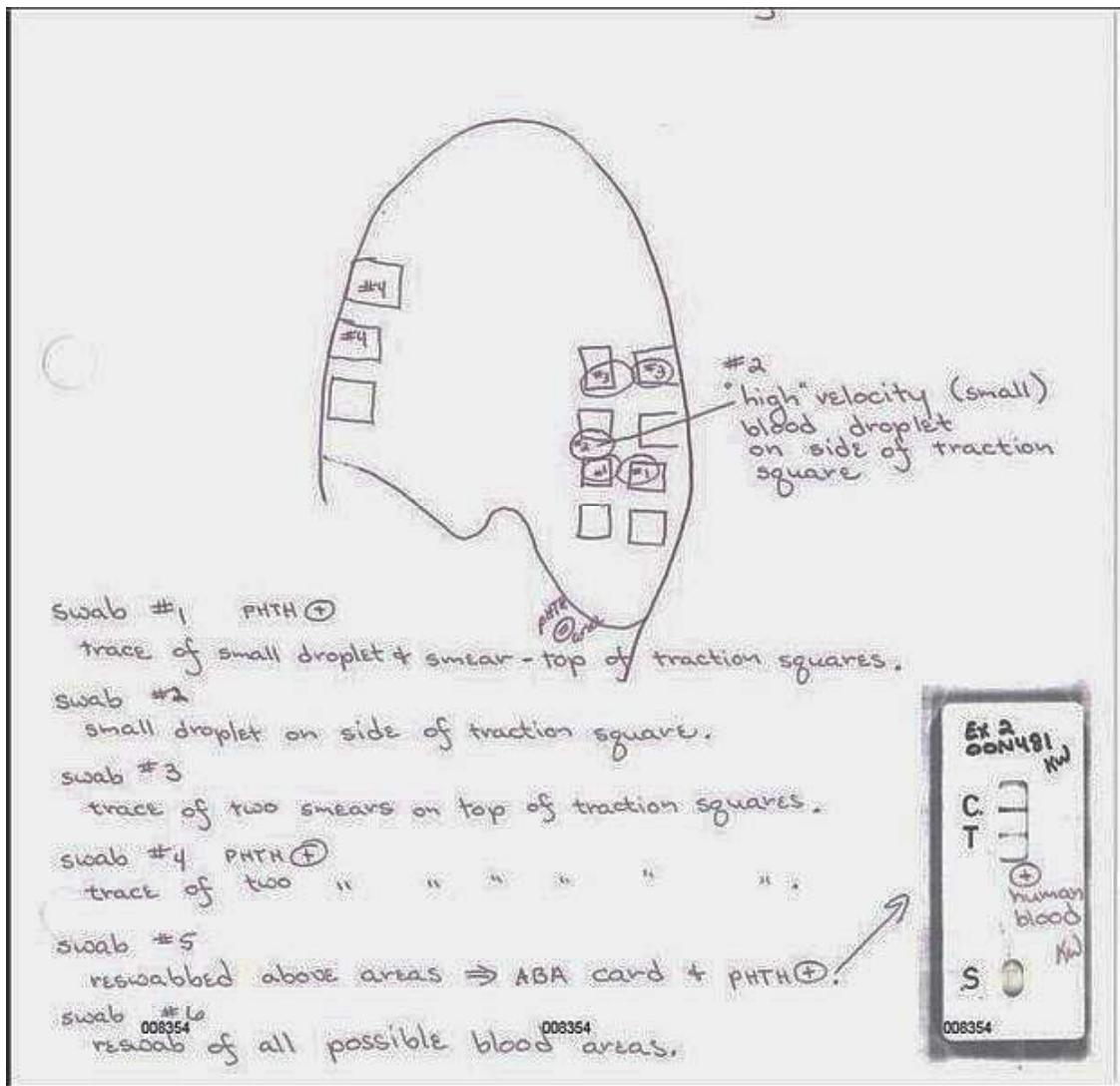


Figure 20: Sketch by Kathy Wilcox of sole of left shoe

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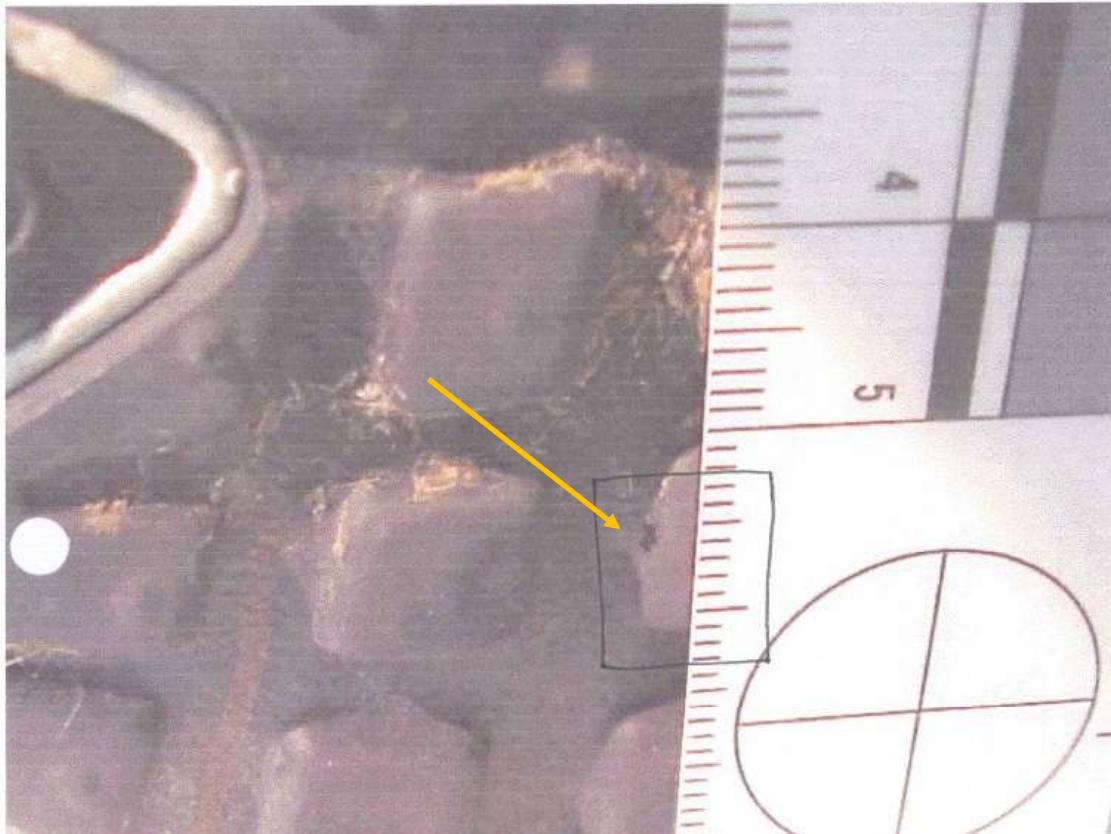


Figure 21: Lab image of sole of left shoe

The stain on the left shoe, referred to as a "high" velocity bloodstain in the sketch and reports, is not a round or elliptical stain one would expect with a high velocity bloodstain. Similarly, a stain produced from an expiration, cast-off, or arterial spurt projection would most likely be round or elliptical. Figure 20 and Figure 4 and Figure 5 show it to be a small irregular shaped stain. It has a geometrical pattern more like stains produced by insects.

The sketch indicates the presence of other stains that tested positive for blood. These are smaller stains. There are no good close-up images of these stains. Their geometrical patterns are difficult to describe from images. The stains do not seem to provide a sense of directionality. There are no misting like stains or blood and tissue mass. There are no stains with air bubbles. There are not a lot of stains like one would expect with gunshot or expiration.

There was no supporting information from the autopsy or witnesses of injuries that would corroborate bloodstains from expiration. There was no case information of an instrument or object that could have caused injury with bleeding found at the scene or suspected of being associated with the death of Leah Freeman. Expiration is considered a medium velocity bloodstain.

The body was in an advanced state of decomposition. Blood around the mouth or the nose was not presented to examiners. There was no information of sharp force injuries or blunt force injuries that would associate an arterial spurt as causing the stain. There were no broken bones or skeletal trauma that would indicate strangulation or blunt force trauma. Arterial spurt is considered medium velocity bloodstain. There is no information about a firearm or other instrument that supports high force that would produce a high velocity stain. There was no information or evidence of blunt force trauma that could have caused injury and contribution to cast off bloodstains. Cast off bloodstains are considered medium velocity bloodstains.

In my opinion there is insufficient information to determine the mechanism that produced the bloodstains on the sole of the shoe of Leah Freeman, and, particularly, to identify the allegedly "high" or "medium" velocity stain as one produced by expiration.

b. Interior bloodstain on left shoe of Leah Freeman.

The report by Forensic Science Services, England, noted blood on the left shoe on the lace, rear area, and interior heel area. The report noted a strong odor of decomposition.



Figure 22: Left shoe of Leah Freeman. Yellow lines point to dark areas. These are potential locations of blood. What is not presented are numerous other small spots or dark areas that would be consistent with high velocity or medium velocity projected bloodstains like gunshot produced or excreted bloodstains. The small bloodstain on the inner foot bed is not round. The darkened areas on the inner rear upper portion have a shape like that of a finger smudge, and they are in the area one would touch when removing and carrying a shoe. Mark up by Larry Barksdale.

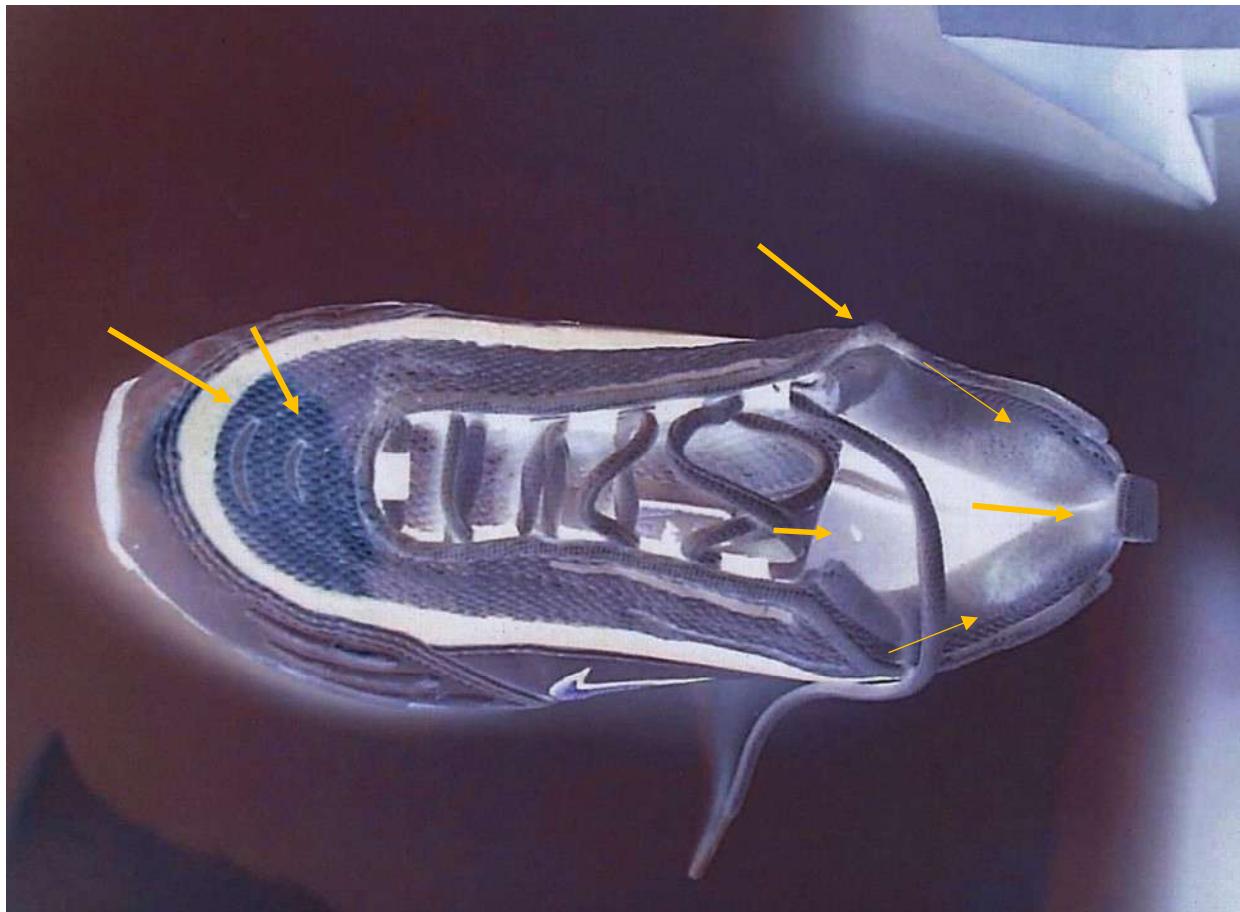


Figure 23: Left shoe of Leah Freeman, inverted. The inverted image indicates possible bloodstains. The upper inner stains look more like fingerprint smudges. There is not an indication of numerous small stains, misting, or other features that would support expiration or gunshot produced bloodstains. Mark up by Larry Barksdale.

The images of the left shoe clearly show a small spot on the interior bed part of the rear bed of the shoe. It is not round, it has a slight elliptical characteristic. It was not confirmatory lab tested for blood. There is insufficient information to make an identification of the mechanism that produced this bloodstain, but insect, drip, or contact are within the range of possibilities. There is a lack of information to support a conclusion of high or medium velocity bloodstain.

The stains on the upper rear interior have characteristics that resemble fingerprint smudges. The stains are consistent with transfer contact stains. I attempted pattern removal techniques to try to bring out ridge detail. I was not successful with this technique. The stains were not confirmatory lab tested for blood.

Conclusion:

It is my opinion, based on my training, education, experience, research, and review of the case file that the bloodstains on the sole of the left shoe of Leah Freeman cannot be identified as a high or medium velocity bloodstain. It is not consistent with excreted bloodstains. It does not have a round or elliptical morphology that would be expected with an excreted bloodstain. It is not accompanied by many other round or elliptical bloodstains in a group with organization and directionality that would be expected of excreted produced bloodstains. It does not have a misting characteristic that is expected with high velocity, such as gunshot produced, bloodstains. It does not have a mass feature that would be expected with excreted and high velocity bloodstains. In addition to geometric characteristics, the bloodstain identified as high or medium velocity was not tested for blood.

It is my opinion that the area in the inner shoe that resembles fingerprint smudges are consistent with transfer bloodstains.

If further information becomes available, I will consider it in any future editing of this report.

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